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Faculty of Dentistry

Examinations

1954

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UNIVERSITY OF TORONTO

FACULTY OF ARTS
ANNUAL EXAMINATIONS, 1954

FIRST YEAR

ART AND ARCHAEOLOGY 1a
THE ART OF THE ANCIENT WORLD*Examiner—F. E. WINTER*

1a students must answer QUESTIONS 1 and 5 plus ANY THREE others from PARTS A and B.

PREDENTAL students must answer QUESTION 1, ONE of QUESTIONS 7 and 8, and ANY THREE others from PARTS A and C.

PART A

1. Identify and date the monuments on the ten slides shown on the screen. Carefully tabulate your answers from 1 to 10 in the order of the slides, including any not identified.

2. Discuss the combination of the Doric and Ionic orders in single buildings during the second half of the fifth century B.C. Do you consider that such buildings were an improvement over those of pure Doric style?

3. Describe in detail the sculptures of the temple of Zeus at Olympia and indicate their importance in the study of Greek sculpture during the fifth century.

4. Describe the construction of the Pantheon of Hadrian in Rome.

PART B

5. Discuss the development of Greek drawing and painting and show in what ways it advanced beyond the mural painting of Crete and Egypt.

6. (a) What examples of the influence of Egyptian or Cretan art on Greek architecture and sculpture can be recognized?

(b) What was the importance of the following in the development of Greek sculpture and architecture?


1. Athletics

2. the great sanctuaries at Olympia and Delphi.

PART C

7. Describe in detail *either* the Assembly Hall at Priene *or* the Council House at Miletos.

8. Discuss the town of Priene as an example of developed Greek town-planning.



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Chemistry 108

UNIVERSITY OF TORONTO

FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, JANUARY 1954

PREDENTAL YEAR

CHEMISTRY 108

Logarithm cards and slide rules may be used.

1. (a) Define the term isotopes. Give examples. Explain their existence by means of a suitable theory.

(b) Give the names of materials or substances, one for each, which belong to the following:

- (i) a solid the solubility of which, in water, decreases with a rise in temperature,
- (ii) an element discovered since 1940,
- (iii) a supersaturated solid solution,
- (iv) a gas with a low critical temperature,
- (v) a solid non-electrolyte.

2. Calculate the molecular formula for glycol from the following data:

(a) On analysis it was found to contain 38.6% carbon, 9.7% hydrogen and 51.7% oxygen;

(b) In the vapour state 520 ml. was found to weigh 1.40 g. at 20° and 780 mm. pressure.

3. (a) State Graham's Law of Gaseous Diffusion.

(b) A solution of calcium nitrate containing 16.0 g. of calcium nitrate in 84.0 g. of water has a specific gravity of 1.13. Calculate the molarity and molality of this solution. (Ca = 40).

4. (a) Why was oxygen chosen as a standard for atomic weights and why was a value of 16.0 assigned to it?

(b) Describe and explain a process that could be used to convert chemical energy into electrical energy.

(c) State three factors that affect the rate of a chemical reaction and describe briefly experiments to illustrate any two of them.

5. Define pH. 50 ml. of an 0.1 molar solution of acetic acid was added to 20 ml. of an 0.1 molar solution of sodium hydroxide. Calculate the pH of the resulting solution. K_{ion} for acetic acid is 1.8×10^{-5} . Complete ionization of sodium hydroxide and sodium acetate may be assumed. (Na = 23).

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6. Define and give an example of *each* of the following:

- (a) common-ion effect,
- (b) complex ion,
- (c) basic salt,
- (d) an indicator.

7. (a) State the oxidation number and covalence of sulphur in H_2SO_4 .

- (b) Explain the Periodic Law by means of the atomic theory.
- (c) Write a paragraph on the importance of colloids.

8. (a) Write a short descriptive paragraph on *any two* of the following topics:

- (i) Industrial uses for sulphates.
- (ii) The softening of water.
- (iii) Abrasives.
- (iv) Important calcium compounds.

(b) Define and where possible give examples of the following terms:

- (i) pigment,
- (ii) tempering,
- (iii) eutectic,
- (iv) alloy.

UNIVERSITY OF TORONTO

FACULTY OF DENTISTRY
FACULTY OF FORESTRY
FACULTY OF PHARMACY

ANNUAL EXAMINATIONS, 1954

ENGLISH COMPOSITION

Examiners - The Staff in English

Candidates will write an essay of approximately 1,000 words on ONE of the following topics:

1. On serving two masters.
2. You have an intelligent acquaintance who is familiar with prose literature, but has never read any poetry. Try to explain to him what poetry has to offer.

Candidates are reminded that their essays will be marked on the basis of thought content, organization, grammar, diction, spelling, and punctuation.

UNIVERSITY OF TORONTO

FACULTY OF DENTISTRY
FACULTY OF FORESTRY
FACULTY OF PHARMACY

ANNUAL EXAMINATIONS, 1954

ENGLISH LITERATURE

Examiners - The Staff in English

Candidates will answer Part I and three questions from Part II,

Part I (40 marks)

1. For eight of the following, indicate the nature of the influence exerted:

- (a) by Edgar upon Gloucester;
- (b) by Satan upon his followers;
- (c) by Harapha upon Samson;
- (d) by Joan upon Robert de Baudricourt;
- (e) by Joan D'Urbyfield upon Tess;
- (f) by Fielding upon Dr. Aziz;
- (g) by the King of Brobdingnag upon Gulliver;
- (h) by the "eternal Footman" upon Prufrock;
- (i) by the "straighteners" upon Mr. Nosnibor;
- (j) by Mrs. Slipslop upon Lady Booby.

Part II (60 marks)

2. "Of certain works of prose we may rightly ask: 'Do they give pleasure as well as instruction?'" Using this suggested standard of "delightful instruction", estimate and compare the merits of On Liberty and Erewhon OR 'Sweetness and Light' and Gulliver's Travels.

3. Outline and compare the views of providence or justice embodied in Samson Agonistes and Tess of the D'Urbervilles.

4. In the case of two of the following works, show how structure is related to the development of central theme (what the author is trying to say about his subject): Saint Joan, Samson Agonistes, A Passage to India.

5. Supposing that you have just attended performances of Saint Joan and King Lear, distinguish between your response to the death of Joan and your response to the death of Cordelia.

6. Contrast the uses made of the epic form and its related machinery in Paradise Lost and Joseph Andrews.

OR

"Laughter may arise from what is said in a novel or a play; but it may also arise from the comic situations in which certain characters - usually through ignorance or misunderstanding - find themselves." Discuss the use made of these "comic situations" as a source of humor in Joseph Andrews and She Stoops to Conquer.

7. "From Wordsworth through Browning to T. S. Eliot, the progress of English poetry has been from simplicity to complexity, from writing of wide appeal to writing of narrow appeal." Discuss this statement, referring specifically to at least one poem by each of the three authors mentioned.

8. Discuss the reinforcement or extension of meaning provided by the symbol drawn from nature which marks the crisis of King Lear (the storm) and of that which marks the crisis of A Passage to India (the caves).

9. "We admire Satan, who is evil, because he rebels; we have little use for Tess, who is good, because she submits." Comment on this statement, agreeing or disagreeing with it, as you choose.

UNIVERSITY OF TORONTO
FACULTY OF ARTS

ANNUAL EXAMINATIONS, 1954

FIRST YEAR

FRENCH 1a

(Write PARTS A and B in separate books.)

PART A

(Write in a separate book.)

1. Translate into English:

A Venise, la scène changea complètement. Au lieu du tumulte des grandes cités, on n'entend, au milieu du silence, que les cris des gondoliers et le murmure de l'onde agitée par les rames. Cette ville a bien ses charmes, mais elle est triste. Le palais des doges avec toutes ses splendeurs est triste lui-même. Depuis longtemps, l'écho de ses voûtes sonores ne répète plus la voix des gouverneurs, prononçant des arrêts de vie ou de mort dans les salles que nous avons traversées. Ils ont cessé de souffrir, les malheureux condamnés, enterrés vivants dans les oubliettes obscures. En visitant ces affreuses prisons, je me croyais au temps des martyrs. La voix du guide, cependant, me tira de ma rêverie, et je passai sur *le pont des soupirs*, ainsi appelé à cause des soupirs de soulagement des pauvres prisonniers, en se voyant délivrés de l'horreur des souterrains auxquels ils préféraient la mort.

2. Translate into French: Write your answer on alternate lines.

John's home is in South America, a country much vaster and more important than you may think. He left there on the midnight boat to come to Canada and study at the University of Toronto, one of the finest centres of education in the world. Although he arrived in Toronto quite exhausted from his trip, he does not regret his decision. If it had been possible, he would have liked to go to France, but now that he has lived here for a semester, he has decided to remain among his Canadian friends. In particular, he enjoys watching the football games each Saturday afternoon. He has never seen anything just like that before. However, certain aspects of this foreign sport do not please him too much. People have told him that he ought to become accustomed to this, and perhaps, before returning to his own country, he will be more used to the customs of foreign lands. As for his studies, he is quite satisfied both with the subjects offered and the way they are taught. At the end of a few years, he expects to be an educated gentleman. Do *you* think John is lucky to have come to Canada?

PART B

(Write in a separate book.)

1. Translate into English, and answer the questions that follow:

Il sort, il arrive à la porte d'une ancienne mosquée convertie en église par les fidèles. Le cœur saisi de tristesse et de religion, il pénètre dans le temple qui fut autrefois celui de son Dieu et de sa patrie. La prière venait de finir: il n'y avait plus personne dans l'église. Une sainte obscurité régnait à travers une multitude de colonnes qui ressemblaient aux troncs des arbres d'une forêt régulièrement plantée. L'architecture légère des Arabes s'était mariée à l'architecture gothique, et, sans rien perdre de son élégance, elle avait pris une gravité plus convenable aux méditations. Quelques lampes éclairaient à peine les enfoncements des voûtes; mais, à la clarté de plusieurs cierges allumés, on voyait encore briller l'autel du sanctuaire: il étincelait d'or et de pierreries. Les Espagnols mettent toute leur gloire à se dépouiller de leurs richesses, pour en parer les objets de leur culte; et l'image du Dieu vivant placée au milieu des voiles de dentelles, des couronnes de perles et des gerbes de rubis, est adorée par un peuple à demi nu.

(a) Give the author and title of the story from which this extract is taken.

(b) What Romantic quality or qualities of the writer are illustrated by this passage?

2. Contrast Nodier's treatment of the element of mystery in *La Combe de l'homme mort* with that of Balzac in *Un Episode sous la Terreur*.

3. In the Introduction to *Chatterton (Dernière Nuit de travail)* what is Vigny's attitude to the suicide of the hero? Relate briefly the incidents of the play that lead up to this suicide.

4. Compare the attitude to Nature of the four Romantic poets as revealed in *Le Lac*, *La Maison du Berger*, *Tristesse d'Olympio*, and *Souvenir*.

OR

Locate (author and poem) and explain briefly the significance of these lines within the poems from which they are taken:

- (a) "Voyant ma petitesse et voyant vos miracles,
Je reprends ma raison devant l'immensité."
(b) "Quel est cet élixir? Pêcheur, c'est la science,
C'est l'élixir divin que boivent les esprits,
Trésor de la pensée et de l'expérience!"
(c) "Je parcours tous les points de l'immense étendue,
Et je dis: "Nulle part le bonheur ne m'attend."
(d) "O flots, que vous avez de lugubres histoires!
Flots profonds redoutés des mères à genoux!"

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1954

PREDENTAL YEAR

MATHEMATICS

1. Differentiate the following functions.

$$x \sqrt{1+x}, \quad e^{\cos x}, \quad x - x \tan x.$$

2. A plane figure is composed of a rectangle ABCD and a semi-circle having the upper side AB of the rectangle as diameter. If the perimeter of the figure is fixed show that the greatest area is attained when the rectangle ABCD is a square.

3. Evaluate the following integrals.

$$\int \frac{\sec^2 x \, dx}{1 + \tan x} \quad \int \frac{1}{(x-2)(x-4)} \, dx, \quad \int \sin^2 x \cos^2 x \, dx.$$

4. A particle moves in a straight line with an acceleration proportional to the time t . If the distance covered is $1\frac{1}{2}$ feet at $t = 1$ and 6 feet at $t = 2$ find the velocity of the particle at $t = 3$.

5. Find the length of the curve

$$y = \frac{e^x + e^{-x}}{2}$$

between the points $x = 0$ and $x = 1$.

6. Find the area in the first quadrant bounded by the y axis, the curve $27y = 4x^3$ and the circle $x^2 + y^2 = 25$.

7. A surface of revolution is generated by revolving the part of the curve $y = x \sin x$ between $x = 0$ and $x = \pi$ about the x axis. Find the volume which it encloses.

8. Find a plane which passes through the points $(1, 1, 1)$ and $(1, 2, 3)$ and which is perpendicular to the plane $3x + y + z + 1 = 0$.

9. Find the tangents to the curve
 $x^2 + xy + y^2 = 19$

which have slope $= 7/8$.

10. By rotating the coordinate axes eliminate the xy term in the equation of the conic

$$5x^2 + 4xy + y^2 = 1.$$

11. Discuss the intersections of the hyperboloid

$$\frac{x^2}{4} + \frac{y^2}{9} - \frac{z^2}{25} = 1.$$

with planes parallel to the coordinate planes.

UNIVERSITY OF TORONTO

FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1954

PREDENTAL YEAR

CHEMISTRY 216

ORGANIC CHEMISTRY

1. Write a two-page essay on *EITHER*
Organic chemistry and drugs

OR

Organic chemistry and food.

Write structural formulas for as many as possible of the organic compounds mentioned.

2. (a) Distinguish structurally among amides, amines and azo compounds. Write the formula and give the name for a specific example of each class.

(b) Write an equation for a reaction that could be used to prepare: a quinone, an hydroxy acid, a tertiary alcohol.

3. Write structural formulas, give alternative names and state a specific use for each of the following:

- | | |
|--------------------|----------------------|
| (i) anthraquinone, | (v) cream of tartar, |
| (ii) novocaine, | (vi) sulfathiazole, |
| (iii) caffeine, | (vii) indigo, |
| (iv) pyridoxine, | (viii) veronal. |

4. Show by means of a series of equations how the first named compound can be converted into the second named compound:

- (i) toluene into cinnamic acid,
- (ii) ethanol into tertiary butyl alcohol,
- (iii) benzene into benzenesulphonamide,
- (iv) ethanol into lactic acid.

5. (a) Write equations to illustrate the differences between

- (i) acylation and alkylation,
- (ii) polymerization and condensation.

(b) Define the following. Give examples to illustrate your answer.

- (i) tautomerism,
- (ii) geometrical isomerism.

- (c) Write formulas for benzal chloride and benzoyl chloride.

6. Write a descriptive note on *any two* of the following topics:

- (i) Baeyer's strain theory,
- (ii) Korner's method for determining structure,
- (iii) Petroleum.

7. Give the name and formula for an example of each of the following:

- (i) explosive,
- (ii) hexacyclic heterocyclic compound,
- (iii) local anaesthetic,
- (iv) carbohydrate,
- (v) soporific.

UNIVERSITY OF TORONTO

FACULTY OF DENTISTRY

FACULTY OF FORESTRY

CHRISTMAS EXAMINATIONS, NOVEMBER 25, 1953—2:00 P.M.

PHYSICS

MECHANICS, PROPERTIES OF MATTER, HEAT

Examiner—A. C. H. HALLETT

Any SIX questions constitute a full paper. Candidates are permitted the use of slide-rules and Clark's Tables.

1. (a) Discuss briefly the importance in experimental work of computing percentage errors wherever possible.

(b) A student measuring the coefficient of thermal expansion of an iron rod of length 59.8 cm, passed first water at 16.2°C and then steam at 98.7°C through the tube enclosing the rod. At 16.2°C and at 98.7°C the readings on the micrometer were respectively 12.32 mm and 12.98 mm. Calculate the coefficient of thermal expansion of iron and, assuming that the student has given only those figures which are significant in his measurements, calculate the percentage error in the calculated value for the coefficient arising from likely errors of measurement.

(c) Discuss briefly the sources of other errors not considered, and indicate where possible, how these errors may be avoided or reduced in importance.

2. (a) Explain how the method of vectors is used to determine the resultant of a number of forces acting at a point and discuss whether or not the vector method is simpler than any other method which might be used.

(b) Two Foresters drag a fallen tree of mass 200 lbs. They attach two ropes to one end of the tree and pull horizontally so that the ropes make an angle of 30° with each other. Assuming that both men pull equally and that the coefficient of friction between the tree and the ground is 0.60, calculate the force which must be exerted by each man to move the tree at a uniform velocity.

3. (a) State Newton's Laws of Motion and explain how they may be modified so as to apply to circular motion.

(b) The roof of a house is inclined at an angle of 50° to the horizontal. A mass of snow starts from rest and slides 10 ft. along the roof, and then falls 40 ft. to the ground below. Neglect friction and calculate the distance as measured along the ground from the house to the point at which the snow hits the ground.

4. (a) State Newton's Law of gravitation, and explain briefly how the law is responsible for the motion of the planets. From a consideration of the motion of the planets, deduce a relation relating the distance of any planet from the sun to the time taken for the planet to complete one journey round the sun.

(b) An aeroplane dives vertically attaining a speed of 250 m/sec when it flattens out into a horizontal course. In the process of flattening out, the 'plane travels along a circular path which has a radius of 600 m. Calculate the force exerted by the 150 lb. pilot on his seat at the lowest point of the circular path.

5. (a) Explain why "mechanical perpetual motion is a physical impossibility" and illustrate your answer by an example.

(b) A Dentist drills a tooth with a steel bur of mass 1 gm. He finds that a torque of 2×10^5 dyne-cm is necessary to keep the drill rotating at 3,000 rev/min during drilling. Assuming that half the heat developed goes into the bur, calculate the rise in temperature of the bur in 10 seconds of continuous drilling.

6. (a) State the law of conservation of angular momentum and explain, giving examples, how the law is applied in practice.

(b) A four-wheeled trolley has a total mass of 1500 gms. Each of the four wheels are solid disks of mass 100 gm and radius 5 cm. Neglect friction and calculate the acceleration of the trolley as it runs down a plane inclined at an angle of 30° to the horizontal.

7. (a) Describe briefly the methods by which heat may be transferred from one body to another, and show how the construction of a Dewar flask minimises the transfer of heat from the outside to the inside of the flask.

(b) A house has 20 glass windows 5 ft. high and 3 ft. wide. Assuming that the thickness of the glass is 1.5 mm, calculate the amount of heat lost through the windows during a day when the inside and outside temperatures are respectively 70°F and 32°F .

(c) Explain briefly why the fixing of additional "storm" windows outside the existing windows of a house would reduce the heat loss.

8. (a) Describe briefly an experiment you would do to determine the coefficient of restitution of a substance. What is the full physical significance of the coefficient of restitution?

(b) A rod of steel of circular cross-section has a diameter of 2.5 cm and is heated to 200°C , clamped at both ends and then cooled to 15°C . Calculate the force exerted on the clamps.

9. (a) Write brief notes on any *three* of the following emphasizing

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their importance in the development of science and stating their specific contributions.

Newton, Galileo, Boyle, Lord Kelvin, Joule.

(b) Write a short account of any *three* of the following. In each case draw attention to the physical significance and the practical every-day application of the subject in question.

The Principle of Archimedes, The Bernoulli Effect,
Coefficient of Restitution, Latent Heat of Fusion, Friction.

DATA

Moment of Inertia of a disk of mass M and radius R about an axis through centre perpendicular to face $= \frac{1}{2} MR^2$.

Steel:

Density	7.8 gm cm^{-3}
Specific Heat	$0.11 \text{ cal gm}^{-1} \text{ }^\circ\text{C}^{-1}$
Coefficient of linear expansion	$1.2 \times 10^{-5} \text{ }^\circ\text{C}^{-1}$
Young's Modulus	$19 \times 10^{11} \text{ dynes cm}^{-2}$

Glass:

Density	2.6 gm cm^{-3}
Specific Heat	$0.16 \text{ cal gm}^{-1} \text{ }^\circ\text{C}^{-1}$
Thermal Conductivity	$2.5 \times 10^{-3} \text{ cal cm}^{-1}\text{sec}^{-1} \text{ }^\circ\text{C}^{-1}$

UNIVERSITY OF TORONTO

FACULTY OF DENTISTRY—PRE-DENTAL YEAR

FACULTY OF FORESTRY—FIRST YEAR

FACULTY OF PHARMACY—SECOND YEAR

ANNUAL EXAMINATIONS, 1954

PHYSICS

SOUND, ELECTRICITY AND MAGNETISM, LIGHT,
ATOMIC AND NUCLEAR PHYSICS*Examiner*—A. C. H. HALLETT*Any SIX questions constitute a full paper.**Candidates are permitted the use of Slide-rules and Clark's Tables.*

1. (a) Discuss what you would consider to be the main requirements for high fidelity sound reproducing equipment, stating the reasons for the requirements you mention. To what extent can one obtain in one's house faithful reproduction of the original performance which was recorded?

(b) Calculate the wavelength of a 10 kc/sec signal recorded at the beginning of a 12-inch diameter $33\frac{1}{3}$ R.P.M. gramophone record. What demands must be made on the shape of the reproducing stylus to ensure that this 10 kc/sec signal will be faithfully picked up by the stylus?

2. (a) Describe the method used to transmit electrical power over long distances emphasizing the reason for the method used.

(b) Explain how a milliammeter (0 — 1 ma) of resistance 300 ohms can be used to measure (i) a current of 1 ampere, and (ii) a potential difference of 100 volts. In each case, calculate the values of the additional components required.

3. (a) It is stated that Faraday's discovery of electromagnetic induction is the foundation of modern electrical engineering. Explain why this is true.

(b) An electron enters a Wilson Cloud Chamber which is placed in a magnetic field of 20 gauss. The track formed by the electron in the cloud chamber has a radius of 10 cms.

(i) Draw a diagram showing the direction of the magnetic field and the path taken by the electron;

(ii) calculate the energy of the electron in Electron Volts.

4. (a) Trace the changes in an A.M. radio wave as it passes through a simple radio receiver. At each stage draw a diagram of the electrical circuit used.

(b) Explain whether or not it is possible to receive an F.M. radio signal on an A.M. receiver.

5. (a) Under certain conditions the correct exposure for a photographic film is said to be "1/100 sec at f/11." What would be the correct exposure at f/22 under the same conditions and why?

(b) What colour of filter should be used to enhance clouds in black and white photography and why?

(c) Of what use to photography would be a piece of polaroid placed in front of a camera lens? In what direction should it be oriented?

(d) A camera is focussed for an object $3\frac{1}{2}$ ft. away, but when a converging lens is placed in front of the camera lens and in contact with it, an object 10 inches from the lens combination is sharply in focus. Calculate the focal length of the converging lens.

6. (a) Explain the physical difference between the formation of the spectrum of a light source by a prism and by a grating.

(b) A beam of monochromatic light is incident upon one face of a glass prism which has a refracting angle of 30° and an index of refraction of 1.550. The other face of the prism is in contact with a thin film of liquid. The prism is rotated, thereby changing the angle of incidence of the light beam, and it is observed that no light is transmitted through the liquid when this angle of incidence is greater than $49^\circ 8'$. Calculate the index of refraction of the liquid.

7. (a) List the fundamental assumptions made by Bohr in his theory of the hydrogen atom and show, without deducing formulae, how this theory explains the Balmer series of the hydrogen spectrum.

(b) Calculate approximate values for the magnitude of the quantum of energy for (i) heat radiation, (ii) visible light, (iii) X-rays, (iv) Radio waves.

8. (a) Explain the action of a cyclotron.

(b) When ${}_7\text{N}^{14}$ is bombarded by high energy deuterons, it is observed that high energy alpha-particles are produced. Calculate the energy of disintegration.

(c) Would the reaction of part (b) be a useful source of energy for an "atomic power station"? Explain.

9. (a) Calculate the binding energy of a deuteron. What is the physical significance of this binding energy?

(b) Describe a method used to detect neutrons.

(c) Describe briefly one theory of the creation of the Solar System.

DATA

1 weber/m ²	=	10 ⁴ gauss.
Electron charge		1.60×10^{-19} coulombs.
Electron mass		9.11×10^{-28} gms.
	<i>or</i>	0.00055 a.m.u.
Planck's Constant		6.62×10^{-27} erg sec.
Velocity of light		3×10^{10} cm/sec.
₀ n ¹ mass		1.0090 a.m.u.
₁ H ¹ mass		1.0081 a.m.u.
₁ H ² mass		2.0147 a.m.u.
₂ He ⁴ mass		4.0039 a.m.u.
₅ B ¹¹ mass		11.0129 a.m.u.
₆ C ¹² mass		12.0040 a.m.u.
₆ C ¹³ mass		13.0076 a.m.u.
₇ N ¹⁴ mass		14.0075 a.m.u.
Annihilation energy of 1 a.m.u.		931 Mev.
Avogadro's Number		6.02×10^{23} atoms/gm. atom.

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UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1954

PRE-DENTAL YEAR

ZOOLOGY

1. By means of a diagram indicate the structure of Areolar Connective Tissue. Label all components. Name four other closely related tissues. Indicate in a brief paragraph why these tissues are closely related.
2. What are the fundamental differences between mitosis and meiosis? Explain these differences with diagrams.
3. (a) By means of diagrams only indicate the organization of the sympathetic nervous system of a mammal.

(b) List ten specific effects of stimulation of this part of the nervous system.
4. How do the vertebra of Elasmobranch, Teleost and Amphibian differ from one another. Use diagrams to illustrate your answer.
5. (a) Describe the origin and formation of the notochord in the amphibian embryo.

(b) Describe the origin of mesoderm in the same group of animals. List five structures derived from this germ layer.

UNIVERSITY OF TORONTO

FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, FEBRUARY, 1954

FIRST DENTAL YEAR

COMPARATIVE DENTAL ANATOMY

1. Describe the food prehensile organs in Annelida, Arthropoda, and Mollusca. Use diagrams to illustrate your answer.
2. Compare and contrast the following dermal derivatives:
 - (a) Teleost scales and reptile scales;
 - (b) Hair and feathers;
 - (c) Elasmobranch scales and vertebrate teeth.
3. Write a note on *two* of the following:
 - (a) Calcification of Dentine
 - (b) The skull and jaws of a Teleost
 - (c) The dentition of a marsupial.
4. With the aid of sketches describe in some detail
 - (a) The molar tooth of the Rhinoceros
 - (b) The dentition of *Cynognathus*
 - (c) Primitive characteristics and high specialization in the dentitions of Placental mammals.
5. By a series of labelled diagrams *only* show the evolutionary sequence in crown pattern leading to molar teeth of primates as proposed by the "Tritubercular Theory".

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

Annual Examinations, May 1954

First Dental Year

GROSS ANATOMY

1. Describe the origin, relationships and distribution of the lingual nerve.
2. Write short accounts of:
 - (a) The orbicularis oculi
 - (b) The maxillary sinus
 - (c) The thyroid gland
 - (d) The inferior cervical ganglion
3. Trace the lymphatic drainage from the gums of the lower jaw as far as the root of the neck, noting the chief nodes through which the lymph would pass.
4. Describe the origin, course, and relationships of the vertebral artery in the neck.
5. (a) Give a concise account of the oesophagus.

(b) Name the structures entering or coming out of the liver at the portal fissure, noting the function of each structure.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

Annual Examinations, 1954

First Year Dentistry

MICROSCOPIC ANATOMY

All questions of equal value

1. Describe, with suitable diagrammatic drawings, the mechanism whereby a long bone grows in length during the growing period of post-natal life.
2. Describe, with drawings, the microscopic structure of a peripheral nerve as seen in both cross and longitudinal sections.
3. Describe, with illustrations, the microscopic structure of the adrenal gland. Without going into detail, comment briefly on how the secretion of its two main parts is controlled.
4. Describe in detail the microscopic structure of the attached gingiva, and state how gingival tissue differs from skin.
5. Describe the formation and microscopic structure of dentin. Discuss the aging changes that occur in dentin and pulp.

Oral anatomy and
Special Oral anatomy

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1954

FIRST DENTAL YEAR

Part "A". Oral Anatomy.

Please answer each question concisely.

1. You are making both a visual and X-ray examination of the mouth of a patient 6 1/2 years of age. List all the points of difference you might use to distinguish between the lower first permanent molar and the lower second deciduous molar.
2. Describe, and illustrate with sketches from labial and mesial, the difference between the pulp chamber and canal in the upper left central incisor of a child 7 years old, when compared with that of an individual 40 years of age. Why are there differences, and how are they brought about?
3. Where is the periodontal membrane? Of what is it composed? List its functions. List the morphological characteristics of tooth crowns which serve to protect this structure.
4. What is meant by "the mixed dentition period"? When does it start? : and when does it end? List the eruption time and the eruption sequence of the teeth of the human dentition during this period.
5. When the jaws are in "ideal" centric relationship what are the cuspal relations of the teeth on the upper left side from the cuspid to the first molar inclusive? What position does the mesio-lingual cusp of the first molar occupy when the mandible is moved into right lateral position. What muscles have been used to move the mandible to this position?

Part "B". Special Oral Anatomy.

Use a separate Examination Book.

1. Sketch the mandible of an infant and indicate: -
(a) location of growth sites.

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1. (b) The manner in which each site contributes to growth.

2. Briefly describe the development of the deciduous dentition prior to the mixed dentition age.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

Annual Examinations, 1954

SECOND DENTAL YEAR

BACTERIOLOGY

Marks

- 20 1. Define "specific" as applied to a remedy for disease and give examples of different types.
- 20 2. Contrast the properties of filterable viruses with those of other agents which cause communicable disease.
- 20 3. Discuss the disease producing properties of streptococcus viridans.
- 20 4. Outline the laboratory procedures used to distinguish Vincent's angina and diphtheria.
- 20 5. Define briefly any ten of the following terms as used in bacteriology:

Pus cell
Spore
Metachromatic staining
Pleomorphism
Acid fast
Agglutination
Toxoid
Toxin
Acidogenic
Tuberculin
Hemolysis
Anaerobiosis
Satellite colony
Antiseptic

UNIVERSITY OF TORONTO

FACULTY OF DENTISTRY

ANNUAL EXAMINATION, FEBRUARY, 1954

SECOND DENTAL YEAR

BIOCHEMISTRY

Answer FOUR questions.

1. (a) Describe the structure of glycogen indicating how Haworth's method of "End Group Analysis" helped to elucidate the structure of polysaccharides.

(b) Discuss the relation of liver and muscle glycogen to blood sugar in mammals.

2. Discuss the importance of oxaloacetic acid in the oxidation of food end products.

3. Write a short description of *each* of the following:

(a) an experiment to demonstrate the changes imposed by the liver on dietary fatty acids,

(b) ketosis,

(c) principles underlying the reduction test for sugars,

(d) cephalin.

4. (a) List the constituents of two types of nucleic acid. Write the formula of the sugar component of each type.

(b) Give a short account of the structure of nucleic acid indicating why Levene's tetranucleotide theory seems to be no longer tenable.

5. (a) Write a short, concise essay on the functions of calcium in the animal organism.

(b) Describe a method for the accurate determination of calcium in serum.

6. (a) What are the components of coenzyme A?

(b) Outline the " β -oxidation acetic acid condensation" theory of fatty acid oxidation. Describe the rôle recently attributed to coenzyme A in the oxidation of fatty acids.

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Operative dentistry

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

Second Dental Year - Final Examination

OPERATIVE DENTISTRY

Answer any six questions.

Please be brief and illustrate whenever possible.

1. Enamel rod direction is basic to an understanding of operative dentistry. Explain how this knowledge is utilized in the preparation of a Class III Gold Foil.

2. (a) Describe and illustrate the nature of normal dentine in the vital tooth.

(b) Explain the present concept of the etiology of dental caries as exemplified in a smooth surface cavity. Where do smooth surface cavities commonly occur?

3. Write your understanding of 8 of the following terms:

- (a) Immune area
- (b) Bevel
- (c) Undercut
- (d) Burnish
- (e) Contact point
- (f) Embrasure
- (g) Ameloblast
- (h) Condenser
- (i) Cavo-surface
- (j) Marginal ridge

4. (a) Define your objective in cavity preparation. What steps in the laboratory do you take to accomplish this objective?

(b) Enumerate the factors within your control, which achieve maximum results in amalgam restorations.

5. The Gingival cavity may be restored with either Gold Foil, Gold Inlay, Amalgam, or Silicate. List the factors which would influence your choice of each. Sketch carefully the differences involved in the preparation of each restorative medium.

6. (a) What additional factors in preparation do you observe in the construction of a 3/4 crown for a bridge abutment than for a single 3/4 gold crown?

(b) How is resistance form achieved in a 3/4 gold crown?

7. (a) Explain and illustrate the differences in an MOD amalgam preparation on a lower first permanent molar and a lower second deciduous molar.

(b) The lower first permanent bicuspid and the distal of the cuspid present certain problems in their preparation to receive an amalgam. What are these problems? How do you modify the preparations for each of these teeth?

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

Annual Examinations, May, 1954

SECOND DENTAL YEAR

PHARMACOLOGY

Write plainly. Up to 5 marks will be added for neatness, legibility and concise answers.

Marks

- 15 1. Compare Ether and Nitrous Oxide as general anaesthetics for use in dentistry, keeping in mind their administration with and without premedication.
- 15 2. Write brief notes on Epinephrine, Metrazol (Leptazol), and Atropine.
- 15 3. Discuss the action of Procaine, Nupercaine, and Cocaine, and their application in dental anaesthesia.
- 15 4. Define caustic. Briefly describe the action of caustics as employed in dentistry, citing examples.
- 16 5. List the properties which are considered essential in anti-infective drugs employed in dentistry; cite examples of drugs having such properties.
- 10 6. Prescribe one dozen powders suitably flavoured, each containing 15 mg. of Codeine, 300 mg. of Phenacetin, and 30 mg. of Caffeine; a powder to be taken every four hours.
- 9 7. Give mode of administration, synonyms, and common dosage forms of Codeine, Amphetamine, and Phenacetin.

Physiology

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

Annual Examinations, May 1954

Second Dental Year

PHYSIOLOGY

All the questions are of equal value.

1. a. Define haemostasis and discuss the factors that operate to produce haemostasis.

b. Show how the following factors fit into a presently accepted scheme of blood coagulation: -
 - i thromboplastin
 - ii accelerator factors
 - iii prothrombin
 - iv fibrinogen
2. Discuss the circulation of blood in the small blood vessels, giving: -
 - (a) The factors that influence the flow of blood in these vessels.
 - (b) The factors that regulate the interchange of water and dissolved substances between the blood plasma and the tissue.
3. Discuss the factors that control the rate and depth of respiration, and how they operate.
4. a. Describe the means whereby the kidney participates in the regulation of the acid-base balance of the body.
b. Discuss the neurohumours of the autonomic nervous system under the headings of: -
 - i Experimental demonstration
 - ii Nerve fibres that liberate them
5. Describe the changes that are produced in the tissues, blood and urine as a result of pancreatectomy. Explain the underlying

causes of these changes.

OR

Describe the effects produced by the administration of adrenaline, and give the underlying causes of these changes.

Accounting

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

Annual Examinations, 1954

Third Dental Year

PRINCIPLES OF ACCOUNTING

1. Explain each of the following terms used in Accounting:
Petty Cash Fund, Accounts Receivable, Accounts Payable.

2. Dr. Gordon Turner, 1304 Yonge Street, Toronto has asked you to keep a set of books for the month of January, 1954. Prepare a Profit and Loss Statement. Bank Balance as of January 1 is \$640.

Jan. 1 Paid rent by cheque \$125.

Received an invoice for \$45. for printing stationery and cards. Paid by cheque \$45 less 2% for cash.

5 Renewals to magazine subscriptions \$15.50, paid by cheque. Bought cleaning supplies including wax, soaps and cleaners. Paid by cheque \$5.65.

13 Bought a mirror for receptions room, paid by cheque \$50. Paid Dry Cleaning Bill by cheque \$3.50 (Drapes).

15 Paid Dental Nurse, Miss D. Lee, an advance on her salary of \$60.

24 Paid the following bills by cheque: Hydro \$13; Consumers Gas \$4.31; telephone \$13.50.
Bought for cash 100 four-cent stamps and 50 five-cent stamps. This purchase was not paid out of petty cash.

31 Dr. Turner sends some of his lab work to Hillmer & Brown. Their statement was paid by cheque, \$123.60.

Statements were received from Toronto Dental Company for supplies, \$23.40; Bash and White for dental supplies, \$135.00; Ontario Dental Supply Company \$56. The above statements paid by cheque.

Jan. 31 Paid Janitor \$20 for January. Paid Miss D. Lee, dental nurse \$180 for the month, less advance of \$60, income tax deducted at source, \$15.35, less unemployment insurance .54 cents.

Paid by cheque, Toronto Laundry Co. \$6.60 for laundry service.

Dr. Turner estimates that he has used \$90 worth of dental supplies for the month, and the depreciation on his equipment and furniture is \$30. Petty cash expenses were \$19.31. Bank Charges \$1.

Keep a supplementary ledger for the dental nurse's salary and one for Petty Cash.

Dr. Turner's receipts for the month of January were as follows:

Jan. 1. \$ 50.	Jan. 19. \$187.25
4. 10.	21. 54.75
6. 25.	22. 10.
10. 140.	23. 2.
11. 34.	26. 80.00
12. 200.	28. 135.25
13. 110.50	31. 18.00
15. 5.25	

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UNIVERSITY OF TORONTO

FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS—MAY, 1954

THIRD DENTAL YEAR

DENTAL SURGERY AND ANAESTHESIA

Marks

- 15 1. Discuss the relative effectiveness and desirability of the following local anaesthetic agents:
 Procaine, Xylocaine, Unacaine.
- 20 2. Make a diagrammatic sketch of a cross-section of the ramus of the mandible at the level of the lingual, showing all the anatomical structures of significance in making an inferior dental (mandibular) injection, and describe briefly the correct method of making this injection.
- 15 3. Name the instruments that would be used for the extraction of a hyper-cementosed lower bicuspid, and state in detail the chair side and operating positions that should be assumed by the operator during the extraction of this tooth.
- 20 4. Describe fully the correct operative procedure for a root resection of an upper central incisor, assuming that the root canal has already been satisfactorily filled.
- 15 5. Discuss concisely what should be done when the maxillary tuberosity is accidentally fractured during extraction. What precautions should be taken to avoid this accident?
- 15 6. Make diagrammatic sketches showing the outline of the muco-periosteal flaps that might be required during the following procedures:
 The insertion of an immediate upper denture (only anterior teeth remaining.)
 The extraction of a lower second bicuspid.
 The removal of an impacted lower third molar.
 The enucleation of a radicular cyst on an upper lateral incisor.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATION, JANUARY, 1954

THIRD DENTAL YEAR

NUTRITION

ALL questions are of equal value.

1. List the food rules with the important nutrient or nutrients supplied by each food group.
2. Describe two methods of diet analysis used here. Which would you use in practice and why?
3. Discuss each of the food groups mentioned in the food rules giving for each group the *types* of food commonly used, their relative nutritive value and where possible their relative cost.
4. During preparation and cooking of a food, how might the nutrients in the food be lost? Discuss.
5. (a) Describe the apparatus and method used in determining the energy value of foodstuffs.
(b) List and discuss briefly the factors influencing the Basal Metabolism of the body.
6. (a) List four water soluble vitamins.
(b) List four fat soluble vitamins.
Give a *very brief* description of each.



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UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

Third Dental Year Examination 1954

ORTHODONTICS

Instructions:

Tabulate answers.

Illustrate each answer with sketches.

Answer the first two questions in a separate book.

Question:

I. a) State the favourable sequence of eruption of the permanent dentition in both maxillary and mandibular dental arches.

b) Give reasons why this sequence is favourable.

II. Describe a normal deciduous dentition with brief reference to occlusal relationships.

III. Name 10 causes of malocclusion and indicate appropriate orthodontic preventive procedures.

IV. Explain briefly why myofunctional therapy is useful in orthodontics.

V. Sketch anterior and posterior cross bite malocclusions in the permanent dentition and appliances for treatment of these conditions.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

Annual Examinations, 1954

THIRD DENTAL YEAR

PATHOLOGY

Marks

- 20 1. Write an account of hereditary dentinogenesis imperfecta to include its aetiology, pathogenesis, radiographic and clinical findings.
- 20 2. List in tabular form a classification of gingival enlargements including examples.
- 20 3. What evidence of anaemia may be manifested in the mouth?
- 20 4. Define ulcer and relate how such a lesion might be investigated to determine its cause.
- 20 5. What is the pathogenesis of subacute bacterial endocarditis?

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

Annual Examination - May, 1954

Third Dental Year

PERIODONTICS

Answer all questions in point form or with diagrams

Marks

- 20 (1) Describe in detail, with the aid of diagrams, the epithelial attachment.
- 5 (2) a/ Define "Gingivitis".
- 15 b/ Describe fully the clinical manifestations of the different types of gingivitis.
- 5 (3) a/ Define "periodontitis".
- 15 b/ List the main clinical differences between Periodontitis Simplex, Periodontitis Complex and Necrotic Periodontitis.
- 10 (4) a/ When is pocket reduction by the production of recession indicated?
- 10 b/ What methods could you employ to produce a recession?
- 20 (5) Outline in proper sequence the steps for the complete case management for a patient with Complex Periodontitis.

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UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

Annual Examinations, May, 1954

Third Dental Year

PROSTHODONTICS

Write legible and concise answers

Marks

- 15 1. Discuss the importance of replacing a lost mandibular first molar stating what results could be expected if it were not replaced soon by a fixed bridge.
- 20 2. Describe the steps in sequence in the preparation of a maxillary cuspid tooth for a conventional partial (3/4) veneer crown as an attachment for the retention of a fixed bridge.
- Make drawings of the proximal, incisal, and lingual aspects of the finished preparation.
- 15 3. Write a short account of the general indications and contra-indications for removable partial dentures and give some practical suggestions for making a choice of the type most suitable for various mouth conditions.
- 15 4. Write notes on major and minor connectors as parts of a removable partial denture including such points as the various types and requirements for each type mentioned.
- 15 5. What factors govern the selection of the maxillary anterior teeth for a complete denture when records such as size, form, and shade are not available for an edentulous patient?
- 20 6. Discuss some of the important factors in complete denture prosthesis which influence (a) the stability of dentures and (b) the retention of dentures.

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UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS JUNE 1954

THIRD DENTAL YEAR

SURGERY

1. Describe the clinical picture and pathology of a typical carbuncle. Where do these lesions usually occur and why? What is most commonly the organism?
2. At your summer cottage a small boy gashes the dorsum of his foot, deeply and widely, with an axe. What would you do?
3. Enumerate the ways in which an individual may become infected with the tubercle bacillus. Outline the methods of spread of this disease in the body.
4. Twenty-four hours after a tooth extraction, a patient complains that he is still bleeding. How would you assess the magnitude of his blood loss?
5. Where is the "tonsillar" lymphnode? Discuss the differential diagnosis of enlargement of this node.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1954

FOURTH DENTAL YEAR

DENTAL PRAXIS

Part A. History, Ethics & Jurisprudence

Marks

- 10 (1) Outline court procedure in a criminal action.
- 10 (2) Define: Negligence; Evidence.
- 10 (3) What is meant by the Tripod of a Profession?
- 10 (4) Outline the development of organized dentistry in Canada.
- 10 (5) In a professional respect, state your opinion respecting: -
 - (a) Advertising
 - (b) Consultations
- 10 (6) Define and discuss the use of prescriptions.
- 10 (7) Discuss the chief differences between professional and commercial activities.

Part B. Practice Management.

Use separate Examination Book

- 15 (1) Indicate in order of importance the factors a dentist should consider in determining his fee. Give reasons for placing the first four factors in their respective order.
- 15 (2) "Dentistry is a member of the healing arts." Elaborate on this statement.

Dental radiology.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

Annual Examination, May, 1954

DENTAL RADIOLOGY

FOURTH DENTAL YEAR

ALL QUESTIONS ARE OF EQUAL VALUE

1. Define the following:
 - (a) Dental radiology
 - (b) Dental Radiologist
 - (c) Radiolucent
 - (d) Radiographic contrast in film
 - (e) Radiographic density of film
 - (f) Soft Rays
 - (g) Ampere
 - (h) Kilovolt
 - (i) Anode
 - (j) Cathode
2. (a) What precautions should be taken to avoid excessive radiation to (a) the patient (b) the dentist?

(b) If you were required to make a radiographic examination of the upper right second and third molar region, describe the steps in the procedure which you would follow under the following headings:
 - (a) Adjustment of the x-ray machine
 - (b) Position of the patient in the chair
 - (c) The specific technique for this area
3. Describe the radiographic appearances of the following:
 - (a) Cementoma (Periapical Osteofibrosis)
 - (b) Compound Composite Odontome
 - (c) Sclerosing Osteitis
 - (d) Radicular Cyst
 - (e) Root fragment in the Antrum

4. Discuss apical infection under the following headings:
 - (a) The manner in which organisms gain access to the apex
 - (b) Radiographic appearance or manifestations of rarefying osteitis at the apex
 - (c) The relationship between size of lesion and toxicity
 - (d) The use of vitality tests as an aid in diagnosis

5. Discuss the value of Radiography in Dentistry under the following headings:
 - (a) Operative Dentistry - Endodontics
 - (b) Oral Surgery
 - (c) Prosthetics
 - (d) Pedodontics
 - (e) Orthodontics
 - (f) Periodontics

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1954

FOURTH DENTAL YEAR

DENTAL SURGERY AND ANAESTHESIA

1. Describe the procedure that should be followed when the root of an upper molar is accidentally displaced into the maxillary sinus.
2. Describe the surgical correction of an abnormal maxillary frenum and state the indications for this operation.
3. Describe the Partsch method for the treatment of cysts in the dental area and state the indications for this method of treatment.
4. Describe the correct method for the removal of an upper first molar tooth that is abnormally rigid in the mouth with a heavy covering of buccal bone and the roots of which are widely diverted.
5. Describe in detail the signs and symptoms that would be exhibited by a patient during the surgical stage of nitrous oxide oxygen anaesthesia.
6. Discuss fixation of mandibular fractures in relation to factors influencing union, and describe two methods of splinting.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

MEDICINE

FOURTH DENTAL YEAR - 1954

1. (a) Write what you know about calcium metabolism.
(b) Discuss the cause, symptoms and signs of hyperparathyroidism.
2. Write a note on,
 - (1) Pleurisy.
 - (2) Acromegally.
 - (3) Obesity.
 - (4) Coronary Thrombosis.
3. Discuss the present concept of focal infection in relation to systemic disease.
4. Describe fully two types of anemia which have oral manifestations.
5. Write a note on,
 - (1) Disseminated sclerosis.
 - (2) Osteo arthritis.
 - (3) Poliomyelitis.
 - (4) Bronchiectasis.

Operative Dentistry

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

Annual Examination, 1954

FOURTH DENTAL YEAR

OPERATIVE DENTISTRY

Marks

- 20 1. Enumerate all the points which you think are important in establishing and maintaining the confidence of your patient during operative procedures. Elaborate briefly on the five most important points in your list.
- 20 2. Is it true or false that the mechanical aspects of cavity preparation must conform to the biological aspects? Write a full explanation in defence of your answer to this question.
- 20 3. A woman, age 45, with complete dentition and relatively few fillings comes to your office complaining of discomfort on the left side of her face. The discomfort at times becomes quite acute pain which seems to have no definite times, it appears to be in the upper jaw, sometimes in the lower jaw. The spasms of discomfort are irregular in time intervals.

Outline Briefly: -

- (a) How would you determine whether the discomfort is of dental origin?
- (b) If the discomfort is of dental origin what would be your procedure?
- (c) If the discomfort is not of dental origin what would be your procedure?
- 20 4. A patient, age 20, comes to you with an upper non-vital central incisor, of normal colour, fractured from the gum line at the mesial to the incisal angle at the distal. The tooth has been successfully treated from an endodontic standpoint.

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The patient requests you to make a porcelain jacket crown to restore the tooth to normal appearance and function.

What would be your reply and what would be the steps you would follow in treating this case?

20 5. (a) Give operative procedures necessary in treatment of a mechanically exposed vital pulp.

(b) Give the general precautions necessary following any pulp capping procedure.



The first part of the paper is devoted to a general
 discussion of the problem. It is shown that the
 problem is of great importance in the theory of
 functions. The second part is devoted to the
 study of the properties of the function. It is
 shown that the function is continuous and
 differentiable. The third part is devoted to the
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UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATION, 1954

FOURTH DENTAL YEAR

ORTHODONTICS AND PEDODONTICS

50% Part "A" Orthodontics

Instructions: Answer each question in tabulated form. Illustrate each answer with sketches.

1. (a) Describe the appearance of a child nine years of age with the following abnormal habit of long duration: (1) Lip biting,
(2) Mouth breathing.

(b) Sketch and describe an appliance for the orthodontic correction of each abnormality.

2. Classify orthodontic abnormality. State what preventive procedures are required to avert or alleviate each type of condition.

50% Part "B" Pedodontics

Instructions: Answer in a separate book.

1. A child, eight years of age, requires the removal of the following primary teeth: -

e	d	.	6dc21	12ce6	,	may
e d	d e		6 c21	12c 6		

be adequately restored. Discuss from a standpoint of space maintenance the management of this case during the mixed dentition period.

2. A child, twelve years of age, has a severe hypoplastic condition of several permanent teeth. The case history indicates that this condition resulted from a severe illness during the infancy period.

(a) What permanent teeth are involved by the hypoplasia?

2. (b) Illustrate the probable position of the hypoplastic line on the clinical crown of each affected tooth.

(c) List the metabolic factors that are usually involved in the production of hypoplastic teeth.

(d) Differentiate between Hypoplasia and Hypocalcification.

3. List and illustrate the major requirements of an ideal Class II cavity preparation in a primary molar tooth.

4. (a) Discuss the procedure in the construction of an intra-alveolar space maintainer for a four year old child who has lost a second primary molar prematurely.

(b) What advice would you give the parents regarding their future responsibility in this case?

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATION, 1954

FOURTH DENTAL YEAR

PERIODONTICS

A patient, age 45, with good general health, complains of aching pain and tenderness to touch of area of face in front of left ear. Pain extends to temporal and occasionally mastoid areas. He has been having pain periodically in this area during last five years. Beginning two years ago frequency and intensity of attacks of pain increased markedly immediately following extraction of deeply impacted lower left third molar. Pain is now almost continuous and severe. It is intensified by efforts to chew tough foods or by yawning or by cold winds. The degree of hotness, coldness, saltiness, sourness or sweetness of foods has no influence on pain. Sometimes pressure of his face on a pillow will awaken him from sleep.

All of the teeth are present except the two lower first molars and the four third molars. All of the extractions, except for lower left third molar, were performed about ten years ago. There has been marked drifting and tipping of the remaining lower molars and bicuspid. The upper first molars have moved toward edentulous lower first molar spaces. They have about two millimetres of supraversion. He has now a relative immunity to dental caries. There is 5 millimetres overbite and 0 to 3 millimetres overjet.

Throughout the mouth, except about the upper incisors there is an evenly distributed chronic gingivitis. There is a medium amount of supra and subgingival calculus. There are many pockets of 3 and 4 millimetres depth at the sides of the inter dental gingival papillae. There is a pocket of 6 millimetres at the distal of the lower right incisor. Mobility of all teeth is zero or one, except for lower right central incisor which has a mobility of two degrees.

At the labial surface of the upper incisors and cuspids there is a much more obvious inflammation of the gingival tissue than about rest of teeth. Gingivae of this area bleed freely at touch. Patient reports gums in this area have been particularly red since his youth.

They have never been obviously tender to touch. Various medicinal therapies and occasional scaling and polishing have caused temporary subsidence of symptoms.

Mobility of teeth is zero or one degree except for lower right central incisor where it is two degrees.

Radiograms of teeth reveal a small and even loss of alveolar bone edge except at the distal of the lower central incisor. At this latter position there is a sharply angular loss of bone.

1. State probable causes of pain in area of left ear.
2. Outline examination that you, as a dentist, should perform to determine cause of this pain.
3. Outline forms of therapy which might be applicable for pain near left ear.
4. What is diagnosis of periodontal disease described?
5. What is probable diagnosis of particular gingivitis about labial surfaces of upper incisors?
6. Enumerate divisions of therapy that are advised in treatment of periodontal diseases.
7. Outline case-management plan for periodontal diseases described.
8. Describe briefly but specifically therapeutic procedures which would be indicated for elimination of pocket at distal lower right central incisor.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATION, 1954

PREVENTIVE DENTISTRY AND DENTAL PUBLIC HEALTH

FOURTH DENTAL YEAR

1. Discuss various conditions influencing the deciduous teeth before eruption.
2. Discuss the use of L. Acidophilus counts in a dental practice.
3. What are some of the probable causes of the erosion of teeth?
4. Outline a method of diagnosis and treatment for a child who presents with rampant decay of the teeth.
5. Discuss briefly -
 - (a) The general practitioner's responsibility toward dental public health.
 - (b) Dental public health program organization in a community having an adequate quota of dentists.
 - (c) Planning dental health education in the dental office.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATION, 1954

FOURTH DENTAL YEAR

PERIODONTICS

A patient, age 45, with good general health, complains of aching pain and tenderness to touch of area of face in front of left ear. Pain extends to temporal and occasionally mastoid areas. He has been having pain periodically in this area during last five years. Beginning two years ago frequency and intensity of attacks of pain increased markedly immediately following extraction of deeply impacted lower left third molar. Pain is now almost continuous and severe. It is intensified by efforts to chew tough foods or by yawning or by cold winds. The degree of hotness, coldness, saltiness, sourness or sweetness of foods has no influence on pain. Sometimes pressure of his face on a pillow will awaken him from sleep.

All of the teeth are present except the two lower first molars and the four third molars. All of the extractions, except for lower left third molar, were performed about ten years ago. There has been marked drifting and tipping of the remaining lower molars and bicuspid. The upper first molars have moved toward edentulous lower first molar spaces. They have about two millimetres of supraersion. He has now a relative immunity to dental caries. There is 5 millimetres overbite and 0 to 3 millimetres overjet.

Throughout the mouth, except about the upper incisors there is an evenly distributed chronic gingivitis. There is a medium amount of supra and subgingival calculus. There are many pockets of 3 and 4 millimetres depth at the sides of the inter dental gingival papillae. There is a pocket of 6 millimetres at the distal of the lower right incisor. Mobility of all teeth is zero or one, except for lower right central incisor which has a mobility of two degrees.

At the labial surface of the upper incisors and cuspids there is a much more obvious inflammation of the gingival tissue than about rest of teeth. Gingivae of this area bleed freely at touch. Patient reports gums in this area have been particularly red since his youth.

They have never been obviously tender to touch. Various medicinal therapies and occasional scaling and polishing have caused temporary subsidence of symptoms.

Mobility of teeth is zero or one degree except for lower right central incisor where it is two degrees.

Radiograms of teeth reveal a small and even loss of alveolar bone edge except at the distal of the lower central incisor. At this latter position there is a sharply angular loss of bone.

1. State probable causes of pain in area of left ear.
2. Outline examination that you, as a dentist, should perform to determine cause of this pain.
3. Outline forms of therapy which might be applicable for pain near left ear.
4. What is diagnosis of periodontal disease described?
5. What is probable diagnosis of particular gingivitis about labial surfaces of upper incisors?
6. Enumerate divisions of therapy that are advised in treatment of periodontal diseases.
7. Outline case-management plan for periodontal diseases described.
8. Describe briefly but specifically therapeutic procedures which would be indicated for elimination of pocket at distal lower right central incisor.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1954

Dental Hygiene - First Year

67%

Part A - Gross Anatomy

Be relevant. Write legibly.

1. Name the structures passing into or out of the lung at its root and note the function of each structure.
2. Describe the structure of the kidney as seen on cutting the organ open in coronal section (or make a large diagram and label fully.)
3. (a) Name in proper order the parts of the large intestine (do not describe).
(b) Name the openings in the diaphragm and the structures which pass through them.
4. (a) Make a large drawing of a growing long bone and label the parts fully.
(b) What cranial and spinal nerves send fibres into the autonomic nervous system to stimulate (1) sympathetic ganglia, (2) parasympathetic ganglia.

33%

Part B - Anatomy of the Head and Neck

To be answered in a separate book.

Answer each question as concisely as possible.

1. List in order, the blood vessels that a red blood cell would pass through in travelling from the heart to the pulp of the upper right second bicuspid tooth. Tell approximately where each vessel leaves its parent trunk.

2. What structures does the trigeminal nerve innervate, and with what kind of nerve supply (e.g. sensory, secretory, motor, etc.)?

3. Where is the coronoid process? What structure attaches to it and what is the function of this latter structure?

UNIVERSITY OF TORONTO
Faculty of Dentistry

Annual Examinations, February, 1954

First Year, Dental Hygiene

DENTAL ANATOMY

Read the questions carefully, and answer each as concisely as possible.

1. Define each of the following terms:

- | | |
|--------------------------|--------------------|
| (a) Contact area | (f) Alveolus |
| (b) Cervical ridge | (g) Cervical line |
| (c) Periodontal membrane | (h) Embrasure |
| (d) Occlusion | (i) Marginal ridge |
| (e) Deciduous | (j) Cusp |

2. What and where is the interproximal space? Why is it so important to maintain the contour of this space in constructing an artificial restoration in the mouth and why must one be so particular in removing tartar and debris from this area?
3. List, and very briefly describe the various structures that support the teeth in the jaws. How does each serve its purpose?
4. List the teeth of the deciduous dentition in their normal eruption sequence. Give the symbol for each and for the permanent tooth which replaces each, and tell the approximate age for replacement.
5. List the various types of teeth found in the human mouth normally and tell how each group is modified anatomically to serve its special purpose.

Dental Radiography.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

Annual Examinations, 1954

Dental Hygiene - First Year

DENTAL RADIOGRAPHY

1. (a) What are the chief properties of X-rays?

(b) Distinguish between the terms radiolucent, radioparent and radiopaque.

(c) Discuss briefly the history of the X-ray.
2. (a) Describe in detail the parts of an X-ray machine.

(b) Write on the dangers of the X-ray and the precautions that can be employed to avoid these dangers.
3. (a) Discuss the differences between the upper and lower views which help in correctly mounting the full mouth radiographs.

(b) Why is it better to mount radiographs when they are to be examined?

(c) Why is magnification necessary for accurate X-ray interpretation?
4. (a) What is meant by fog on an X-ray film? How many different types of fog are there and what causes them?

(b) How can we test an unexposed film packet to see if it wasn't fogged before use?

(c) State the causes for the following faulty radiographs:
 - (i) Air bells
 - (ii) Black streaks
 - (iii) Small black spots
 - (iv) Small white spots
 - (v) Blurred
 - (vi) Partial image

5. (a) Name five methods of overcoming "gagging" when taking radiographs.
- (b) When you are viewing a radiograph correctly are you looking at the labial or lingual aspect? What characteristics on a periapical film determine the labial from the lingual aspects?
- (c) Why should assistance be sought in radiodontic service for very young children? How many radiographs constitute a full mouth survey for a child of twelve?

UNIVERSITY OF TORONTO

FACULTY OF DENTISTRY
FACULTY OF FORESTRY
FACULTY OF PHARMACY

ANNUAL EXAMINATIONS, 1954

ENGLISH COMPOSITION

Examiners - The Staff in English

Candidates will write an essay of approximately 1,000 words on ONE of the following topics:

1. On serving two masters.
2. You have an intelligent acquaintance who is familiar with prose literature, but has never read any poetry. Try to explain to him what poetry has to offer.

Candidates are reminded that their essays will be marked on the basis of thought content, organization, grammar, diction, spelling, and punctuation.

English literature

The English literature is a vast field of study, encompassing a wide range of literary works and genres. It is a discipline that has evolved over time, reflecting the cultural and social changes of the English-speaking world. The study of English literature involves the analysis and interpretation of literary texts, as well as the exploration of the historical and cultural contexts in which they were produced. This field of study is essential for understanding the human condition and the role of literature in society.

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UNIVERSITY OF TORONTO

FACULTY OF DENTISTRY
FACULTY OF FORESTRY
FACULTY OF PHARMACY

ANNUAL EXAMINATIONS, 1954

ENGLISH LITERATURE

Examiners - The Staff in English

Candidates will answer Part I and three questions from Part II,

Part I (40 marks)

1. For eight of the following, indicate the nature of the influence exerted:

- (a) by Edgar upon Gloucester;
- (b) by Satan upon his followers;
- (c) by Harapha upon Samson;
- (d) by Joan upon Robert de Baudricourt;
- (e) by Joan D'Urbyfield upon Tess;
- (f) by Fielding upon Dr. Aziz;
- (g) by the King of Brobdingnag upon Gulliver;
- (h) by the "eternal Footman" upon Prufrock;
- (i) by the "straighteners" upon Mr. Nosnibor;
- (j) by Mrs. Slipslop upon Lady Booby.

Part II (60 marks)

2. "Of certain works of prose we may rightly ask: 'Do they give pleasure as well as instruction?'" Using this suggested standard of "delightful instruction", estimate and compare the merits of On Liberty and Erewhon OR 'Sweetness and Light' and Gulliver's Travels.

3. Outline and compare the views of providence or justice embodied in Samson Agonistes and Tess of the D'Urbervilles.

4. In the case of two of the following works, show how structure is related to the development of central theme (what the author is trying to say about his subject): Saint Joan, Samson Agonistes, A Passage to India.

5. Supposing that you have just attended performances of Saint Joan and King Lear, distinguish between your response to the death of Joan and your response to the death of Cordelia.

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6. Contrast the uses made of the epic form and its related machinery in Paradise Lost and Joseph Andrews.

OR

"Laughter may arise from what is said in a novel or a play; but it may also arise from the comic situations in which certain characters - usually through ignorance or misunderstanding - find themselves." Discuss the use made of these "comic situations" as a source of humor in Joseph Andrews and She Stoops to Conquer.

7. "From Wordsworth through Browning to T. S. Eliot, the progress of English poetry has been from simplicity to complexity, from writing of wide appeal to writing of narrow appeal." Discuss this statement, referring specifically to at least one poem by each of the three authors mentioned.

8. Discuss the reinforcement or extension of meaning provided by the symbol drawn from nature which marks the crisis of King Lear (the storm) and of that which marks the crisis of A Passage to India (the caves).

9. "We admire Satan, who is evil, because he rebels; we have little use for Tess, who is good, because she submits." Comment on this statement, agreeing or disagreeing with it, as you choose.

Food Chemistry

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

Annual Examinations, May 1954

Dental Hygiene - First Year

FOOD CHEMISTRY

Candidates will answer all five questions.

1. (a) Define the following:

(i) Dalton's Law of Combining Proportions.

(ii) Law of Definite Proportions.

(b) Briefly describe the mechanics of the following types of chemical linkage, using specific examples,

(i) Electrovalent

(ii) Co-Valent

(iii) Co-ordinate

(c) What weights would be required to make up 500 ml. of the following solutions:

(i) 0.1 N hydrochloric acid

(ii) 0.5 M sodium chloride

using the following atomic weights -- sodium 23.0; chlorine 35.5; hydrogen 1.00.

2. (a) For the following homologous series of the hydrocarbons, -

(i) Alkanes (paraffins)

(ii) Alkenes (Olefins)

(iii) Alkynes (Acetylenes)

give, in the form of a table, 1) the first six members of each series

2) the general empirical formula for each series

3) structural formula of each member of each series listed including any and all structural isomers.

(b) Differentiate between the following:

(i) Primary, secondary and tertiary alcohols

(ii) simple and mixed ketones

(iii) monobasic, dibasic and tribasic organic acids.

3. (a) In the form of a table, give four differences between the aldehydes and the ketones. Refer to any experiments that you carried out in the laboratory in this connection.

(b) Using examples to illustrate your answer, describe two systems of nomenclature for naming specific compounds of the following classes, -

(i) aldehydes

(ii) ketones.

(c) Write a short note indicating the role of yeast in the production of alcohol by fermentation. Give equations to represent all the reactions discussed in your answer.

4. (a) Briefly describe the system of classification and nomenclature for the carbohydrates.

(b) Give empirical formulae for the following carbohydrates, - glucose, fructose, lactose, starch.

(c) Give equations to represent the following reactions:

(i) hydrolysis of maltose

(ii) the effect of heat plus potassium hydrogen sulphate on glycerol

(iii) hydrolysis of fats.

5. Briefly discuss the following in order of their appearance in the digestion of food:

(1) the digestive juices, their origin and composition;

(2) indicate the optimum conditions for each enzyme and the action of each in the digestion of food. Represent each reaction by an equation.

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UNIVERSITY OF TORONTO
School of Physical and Health Education

Annual Examinations, 1954

First Year - Dental Hygiene

HEALTH EDUCATION

Examiner: Prof. J. V. Basmajian

Questions are of equal value

Read the questions carefully and answer only what is asked. Write legibly.

1. Name the eleven systems of the body and describe the functions of each system.
2. Write a full account of Joints under the following headings: -
 - (a) definition
 - (b) complete classification; examples
 - (c) uses or functions
3. (a) Write a full account of the structure (gross and microscopic) and functions of skeletal (striated) muscle.
(b) Name and describe the four chambers and the four valves of the heart.
4. Define clearly and concisely: (a) capillary, (b) ureter, (c) stomach, (d) hemoglobin, (f) ligament (g) ovary (h) neuron (i) periosteum.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1954

FIRST YEAR DENTAL HYGIENE

HISTOLOGY

1. Discuss the tissues of a mucous membrane and describe in detail the structures of the gingiva.
2. Describe the microscopic structure of enamel.
3. (a) Make a drawing to show the direction and method of attachment of the oblique fibers of the periodontal membrane.
(b) Explain what happens to the periodontal membrane when the tooth is under excessive occlusal stress.
(c) Name the other groups of principal fibers.

Annual examinations, 1954

School of Nursing
Physical and Occupational Therapy
Hospital Administration
Institute of Child Study
Optometry
Dental Hygiene

PSYCHOLOGY 102
Examiner - R. C. Joyner

Candidates will write on ALL THREE questions. Values of the questions are as follows: Question 1 - 40; Question 2 - 30; Question 3 - 30.

No examination aids may be used.

1. Discuss each of the following:
 - (a) The 'field' of mental hygiene.
 - (b) The mental hygiene point of view.
 - (c) The basic needs of man.
 - (d) Experimental evidence relevant to man's needs for emotional security and mastery.
2. Outline the major mental hygiene implications of any two developmental stages. Suggest the relevance of these to your professional work.
3. Write brief notes on any six of the following:
 - (a) Needs and motives.
 - (b) Phenomenology.
 - (c) Social factors related to food hunger.
 - (d) Folkways and mores.
 - (e) Anxiety.
 - (f) Premature birth.
 - (g) The 'yardsticks' of chronological age and developmental age.
 - (h) The significance of the Moro reflex.
 - (i) Negativism in the pre-school child.
 - (j) Parent-school partnership during the school period.
 - (k) Developing independence during adolescence.
 - (l) Factors conducive to appreciation of heterosexual relations.
 - (m) Self-consistency and middle age.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATION, 1954

SECOND YEAR DENTAL HYGIENE

DENTAL HYGIENE AND ORAL PROPHYLAXIS

1. Calculus:

- (a) What are the requirements for its formation?
- (b) Give a suitable classification.
- (c) What is its significance?
- (d) Using only a suitably labelled drawing explain its formation within a pocket.

2. Using drawings describe the sequence of events in periodontal pocket formation.

3. Gingivitis:

- (a) Give it classification according to: degree, position, type.
- (b) List six causes of gingivitis.
- (c) What is the difference between gingivitis and periodontitis?

4. Name four topics that should be covered in the instructions for the home care of the mouth, and discuss one in detail.

5. Why is it important to instruct the patient in the home care of the mouth?

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

Annual Examinations, May, 1954

DENTAL HYGIENE - SECOND YEAR

DENTAL PUBLIC HEALTH

1. Certain events in the history of dentistry may be considered as influencing the progress of dental public health. Enumerate three of these and describe them briefly.

2. Describe the procedure which dentists may take to organize a dental health program in a community which has an adequate number of dental practitioners.

3. Discuss briefly an ideal health unit organization under the following headings:

- (a) Personnel.
- (b) Program.
- (c) Services provided.

4. You are appointed to a health unit staff and are asked to carry out dental health counselling at a child health centre. There are certain preventive procedures which may be used in dental practice. Describe three of these and tell how this information may be used in dental health education.

5. Describe very briefly your understanding of the following terms:

- (a) Public health.
- (b) Department of National Health and Welfare.
- (c) Health Insurance.
- (d) Epidemiology.
- (e) Prevalence and incidence of dental need.
- (f) D.M.F. rates.
- (g) Fluoride therapy.

UNIVERSITY OF TORONTO
Faculty of Dentistry

Annual examinations, 1953-1954

Second Year - Hygiene

PATHOLOGY

1. Describe the repair of soft tissues under the following two headings: -
 - (a) Repair by primary union
 - (b) Repair by granulation
2. Explain the sequence and mechanisms of the cardinal signs of inflammation.
3. Define hyperaemia and give a tabular classification of causes.
4. Give a concise definition for: -
 - (a) Neoplasm
 - (b) Suppuration
 - (c) Fistula
 - (d) Necrosis
 - (e) Atrophy
5. Describe briefly the two chief theories for the cause of dental caries.

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Physiology

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

Second Year Dental Hygiene

Final Examination in Physiology, 1954

Note: Candidates must answer TWO questions from part A and any other THREE.
FIVE questions constitute a complete paper.

Part A

1. (a) What factors affect the vital capacity?
(b) Discuss the Hering-Breuer reflex.
(c) Define anoxia and list the four main types. In what types may cyanosis be found?
2. (a) Define or describe the following terms:
hyperpnea; Cheyne-Stokes respiration; proximal convoluted tubule; micturition; testosterone.
(b) What is a nephron? Briefly describe the work done by each part of the nephron.
3. (a) What hormones have been isolated in a relatively pure state from the anterior pituitary gland? Discuss briefly the role of any TWO of these.

Part B

1. Discuss the physiology of circulation under the following headings:
 - (a) factors responsible for maintaining arterial blood pressure
 - (b) regulation of the heart rate.
 - (c) factors involved in the return of blood to the right side of the heart.
2. Write a brief note on each of the following:
 - (a) anemia
 - (b) jaundice
 - (c) function of bile

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3. Briefly but clearly indicate the importance of the following to the body:

(a) potassium (c) carbohydrate (c) protein (d) iron.

4. Write a sentence defining any EIGHT of the following:

chyle, sphincter, R.Q. ; paracasein; saliva; pH; carotid body; caecum; semilunar valves; hemolysis.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1954

PREVENTIVE DENTISTRY - DENTAL HYGIENE

SECOND YEAR

1. (a) List Canada's Food Rules.

(b) Describe three methods of dietary analysis commonly used giving briefly advantages and disadvantages of each.

2. Outline the procedure you would follow for a girl - age 14 - height 5 feet 1 inch - weight 140 lbs. haemoglobin 65 - L. Acidophilus count 1,000,000, rampant caries, and with a diet containing very little milk, no vegetables, citrus fruits or cod liver oil and very high in sweet foods.

3. Discuss one theory of dental caries.

4. Discuss the role of the pituitary gland.

UNIVERSITY OF TORONTO
Faculty of Dentistry

Annual Examinations -- January, 1954

Second Year, Course in Dental Hygiene

RADIOLOGY

1. (a) Discuss at least five difficulties involved in taking radiographs of the child patient and suggest methods of dealing with these problems.
(b) What is the suggested number and type of films that constitute a full mouth survey for a child of five years of age and under, a child of approximately eight years and a child of approximately twelve years?
2. (a) What are the advantages and disadvantages of rapid processing (one minute) of dental radiographs?
(b) How can the deterioration of a developer be prevented?
(c) What is the test for suitable density of dental radiographs?
3. Discuss the reduction and intensification of dental radiographs under the following headings:
(a) the chemistry involved in the process;
(b) method of procedure in local and general reduction;
(c) advantages and disadvantages.
4. (a) What are eight advantages of posterior bite-wing radiographic examinations?
(b) What is the advantage of taking posterior bite-wing radiographs when taking a full mouth periapical survey?

4. (c) Why is more exposure required for posterior bite-wings than for periapical radiographs?
5. (a) How is radiodontic interpretation distinguished from diagnosis?
(b) What are some of the causes for misinterpretation?
(c) What normal anatomical landmarks are there in each region?

Accounting

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

Annual Examinations, 1954

DENTAL NURSING

PRINCIPLES OF ACCOUNTING

1. Name four assets.
2. List three purchases which would probably be paid out of the Petty Cash Fund.
3. Dr. Orville Speers of 12 Main Street, Sudbury, Ontario has employed you to take care of his books. You are asked to prepare a Statement of Revenue and Expenditures as of January 31, 1954.

Dr. Speers' receipts are as follows:

Jan. 3. \$ 24.	Jan. 16. \$184.
4. 15.	18. 10.
5. 8.	20. 210.
6. 150.	21. 190.
8. 110.	25. 157.25
10. 95.50	26. 8.60
11. 54.	27. 234.
12. 6.25	29. 87.50
13. 170.	30. 260.00
15. 255.50	31. 100.00

During the month of January, the following disbursements were made:

- Jan. 1 paid rent by cheque \$125.
Renewed subscriptions to magazines, \$16. paid by cheque.
- Jan. 6 Bought dental instruments for \$35. from Suburban Dental Company, paid by cheque.
Bought a rug for reception room from T. Eaton Company \$125. paid by cheque.

- Jan. 6 Bought postage stamps: 100 five-cent stamps, 60 four-cent stamps. Paid by cash.
- Jan. 16 Paid dental nurse to date, \$100, less tax deducted at source \$13. and unemployment insurance 24 cents. Paid window cleaners by cheque \$3.
- Jan. 25 Paid Telephone account \$13.50 by cheque.
- Jan. 31 Paid Consumers Gas Company by cheque \$4.50. This was paid at the bank which charged a ten-cent service charge.
Paid Borne and Hill, for lab. work by cheque \$65.
Paid Janitor's salary by cheque \$25.
Paid Dental Nurse's salary by cheque \$100 less tax deduction of \$13 and unemployment insurance 24 cents.
Paid the following dental supply houses by cheque:
Acme Supply Company \$156.
Sudbury Dental Supply Company \$250.
The J. D. Green Co., Dental Supplies \$25.35.
Paid Hydro Bill by cheque \$3.56
Paid Water Bill by cheque \$2.24
Laundry service \$24. by cheque.

Dr. Speers estimated he has used \$150 worth of dental supplies for the month, and the depreciation on his equipment and furniture is \$50. Petty Cash Expenses \$29.34 and Bank Charges were \$1.24.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY
ANNUAL EXAMINATIONS, 1954

DENTAL MATERIALS & TECHNOLOGY
DENTAL NURSING

1. Describe the manipulation of (*a*) Alginate, (*b*) Agar, (*c*) Modeling compound, in obtaining impressions.
2. What are the indications for use of the various gypsum cast materials?
3. Outline the technique of producing an acrylic appliance.
4. Discuss the construction and spruing of wax patterns for casting purposes.
5. Write brief notes on:
 - (*a*) Casting defects and their prevention;
 - (*b*) Polishing of metal and plastic;
 - (*c*) Baseplate materials.

Dental radiography.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

Annual Examinations, 1954

Dental Nursing

DENTAL RADIOGRAPHY

1. (a) Using a neatly labelled diagram of an X-ray tube, discuss the production of X-rays.

(b) What is the difference between Primary, Stray and Secondary radiation?

(c) Define artefact, fog, radioparent, cassette.
2. (a) Name two methods of processing films and describe one.

(b) How can you remove fingerprints from a finished radiograph; developer and fixer stains from your white uniform?

(c) Why do we wash films after removing them from the fixing solution?

(d) Name the various methods of drying a wet film rapidly.
3. (a) State eight types of faulty radiographs and suggest methods for overcoming these faults.

(b) Are liquid developers as good as those mixed from powders? How often should we change our developer? Our fixer?

(c) How can the action of fixing solution be tested?
4. (a) How many types of bite-wing films are there? When do we use each type?

(b) How do extra-oral films differ from intra-oral films? Give at least four reasons.

4. (c) When do we use a Cassette and when a cardboard film holder for extra-oral films?
5. Discuss the role of the dental nurse in helping her dentist produce a good radiograph.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATIONS, 1954

DENTAL NURSING

DENTAL SURGERY ASSISTANCE

1. Classify the following drugs and state their use:
 - (a) Codeine-Phosphate.
 - (b) Sodium Pentothal.
 - (c) Xylocaine.
 - (d) Ephinephrine.
 - (e) Penicillin.
2. Write a brief description of the following terms:
 - (a) Hypertrophied tissue.
 - (b) Maxillary frenum.
 - (c) Alveolectomy.
 - (d) Apicoectomy.
3. Describe briefly the four stages of nitrous -oxide anaesthesia.
4. A patient arrives at the office to have the upper first, second and third molars and the 1st and second bicuspids removed using local anaesthesia. Discuss the nurse's duty under the following headings: (briefly)
 - (a) Admission of patient.
 - (b) Instruments necessary for the operation.
 - (c) Assistance to the doctor.
 - (d) Care of the patient.
5. Give the sterilizing time for the following:
 - (a) Instruments (boilable)
 - (b) Dressings (autoclave)
 - (c) Tray Covers (autoclave)
 - (d) Rubber gloves (autoclave)
 - (e) Sutures (autoclave)
6. Discuss briefly the method or methods of determining the temperature, pulse and respiration of a patient. Within what limits is considered normal for an adult?

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UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

DENTAL NURSING

JURISPRUDENCE AND ETHICS

Marks

- 25 1. Discuss the Factors Relating to Success in Dental Nursing under the following headings: -
- (a) Personality
 - (b) Habits
 - (c) Making a good impression
 - (d) Enthusiasm
 - (e) Determination
- 25 2. Discuss briefly the following Character Traits which will be of value in governing your conduct in a dental office.
- (a) Common Sense
 - (b) Pleasantness
 - (c) Courtesy
 - (d) Attentiveness
 - (e) Initiative
- 25 3. Define:
- (a) Professional knowledge
 - (b) Professional secrecy
 - (c) Professional Ethics
 - (d) Professional discipline
 - (e) Professional service
- 25 4. Enumerate and discuss briefly the important factors to remember in seeking and holding a position.

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

Annual Examinations, 1954

DENTAL NURSING

OPERATIVE DENTISTRY ASSISTANCE

Marks

- 20 1. Define the following:
- (a) Drug
 - (b) Average dose of a drug
 - (c) Caustic
 - (d) Germicides
 - (e) Tonics
- 20 2. Write brief notes on:
- (a) Making of dental appointments and recall system.
 - (b) The handling of the office telephone.
 - (c) The daily office routine.
 - (d) Sterilization and asepsis in a dental office.
- 20 3. With aid of diagrams describe briefly how you would identify the following pairs of instruments:
- (a) Amalgam plugger from a burnisher.
 - (b) Bin - angle chisel from a gingival margin trimmer.
 - (c) A hoe from a hatchet (No. 2).
 - (d) A wax carver from a plastic Ladmore (No. 4).
 - (e) A root canal file from a reamer.
- 20 4. Discuss in detail the precautions necessary, the instruments and equipment required for the mixing and insertion of the following:
- (a) A silicate cement filling.
 - (b) A silver amalgam filling.
 - (c) Setting of a gold bridge.
 - (d) A root canal filling.
- 20 5. What is the nature of the action of drugs and the conditions which modify the effect of drugs?

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY

ANNUAL EXAMINATION, 1954

ORAL HYGIENE AND PREVENTIVE DENTISTRY

DENTAL NURSING

1. Discuss the various functions of saliva.
2. Discuss the function of the pancreatic gland.
3. Describe two methods of diet analysis giving advantages and disadvantages of each.
4. List Canada's Food Rules. Discuss in detail the first food group listed in the food rules - giving the types of the food commonly used and the chief nutrients present.
5. (a) What are the objectives of tooth brushing?
(b) Describe a well-designed tooth brush.
6. Outline our present day knowledge of the dental caries process.

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10 Prosthodontics

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